

Our Docket No: 42390P4577D

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
)
Phillip E. Mattison) Examiner: Not Yet Assigned
)
Application No: Not Yet Assigned) Art Unit: Not Yet Assigned
)
Filed: Concurrently herewith)
)
For: Image Differencing For)
Analog Photocell Array)
(as amended herein))
_____)
This application is a divisional of:)
Application No: 09/307,574) Examiner: Luu, T.
)
Filed: May 7, 1999) Art Unit: 2878
_____)

PRELIMINARY AMENDMENT

Box Divisional Patent Application
Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Prior to examination of the application, Applicant respectfully requests the Examiner to enter the following amendment and to consider the following remark.

"Express Mail" mailing label number: EJ201091184US

Date of Deposit: November 26, 2001

I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the U.S. Patent and Trademark Office, P.O. Box 2327, Arlington, VA 22202.

Lori E. True

(Typed or printed name of person mailing paper or fee)

Lori E. True

(Signature of person mailing paper or fee)

AMENDMENT

Presented below are the amendments, with changes entered and not marked.

In the Title:

Please delete the title in its entirety and insert the following in place thereof:

--Image Differencing For Analog Photocell Array--

In the Specification:

Page 1, line 4, after the title "BACKGROUND OF THE INVENTION", please insert the following:

--Cross-Reference To Related Applications--

--This application is a divisional of U.S. Patent Application Serial No. 09/307,574, filed May 7, 1999 and assigned to the assignee of the present application.--

In the Abstract:

Please delete the abstract in its entirety and insert the following in place thereof:

--Under an embodiment, a system includes an array of analog photocells; a first plurality of shift cells, each shift cell in the first plurality of shift cells being coupled to a corresponding analog photocell; and a second plurality of shift cells, each shift cell in the second plurality of shift cells being coupled to a corresponding shift cell in the first plurality of shift cells; and a differential operational amplifier having a first input coupled to a terminating output of the first plurality of shift cells and a second input coupled to a terminating output of the second plurality of shift cells.--

In the Claims:

1 16. (New) --A system comprising:
2 an array of analog photocells;
3 a first plurality of shift cells, an output of each shift cell in the first plurality of shift
4 cells being coupled to an input of the next shift cell in the first plurality of
5 shift cells, each shift cell in the first plurality of shift cells being coupled to a
6 corresponding analog photocell in the array of analog photocells;
7 a second plurality of shift cells, an output of each shift cell in the second plurality of
8 shift cells being coupled to an input of the next shift cell in the second
9 plurality of shift cells, each shift cell in the second plurality of shift cells being
10 coupled to a corresponding shift cell in the first plurality of shift cells; and
11 a differential operational amplifier having at least two inputs, a first input being
12 coupled to a terminating output of the first plurality of shift cells and a second
13 input being coupled to a terminating output of the second plurality of shift
14 cells.--

1 17. (New) --The system of claim 16, wherein a key frame of an image captured by the
2 array of analog photocells is transferred from the terminating output of the second
3 plurality of shift cells.--

1 18. (New) --The system of claim 17, wherein the key frame is transferred after the
2 system is first initiated.--

19. (New) --The system of claim 16, wherein the differential operational amplifier produces difference data for the first plurality of shift cells and the second plurality of shift cells.--

20. (New) --The system of claim 19, wherein a set of signals provided by the differential amplifier represents a delta frame of an image captured by the array of analog photocells.--

21. A method comprising:
transferring a signal from each of an array of analog photocells to one storage location of a first plurality of storage locations, an output of each storage location in the first plurality of storage locations being coupled to an input of the next storage location in the first plurality of storage locations;
transferring a signal from each of the storage locations in the first plurality of storage locations to a corresponding storage location in a second plurality of storage locations, an output of each storage location in the second plurality of storage locations being coupled to an input of the next storage location in the second plurality of storage locations; and
obtaining the difference between signals obtained from a terminating output of the first plurality of storage locations and a terminating output of the second plurality of storage locations.--

22. (New) --The method of claim 21, further comprising transferring a key frame of an image captured by the array of analog photocells from the terminating output of the second plurality of storage locations.--

23. (New) --The method of claim 21, wherein the difference between signals obtained from the terminating output of the first plurality of storage locations and the terminating output of the second plurality of storage locations represents a delta frame of an image captured by the array of analog photocells.--

24. (New) --A system comprising:

an array of analog photocells;

a first plurality of shift cells, an output of each shift cell in the first plurality of shift cells being coupled to an input of the next shift cell in the first plurality of shift cells, each of the photocells in the array of analog photocells being coupled to a corresponding shift cell in the of the first plurality of shift cells;

a second plurality of shift cells, an output of each shift cell in the second plurality of shift cells being coupled to an input of the next shift cell in the second plurality of shift cells, a signal from a terminating output of the first plurality of shift cells being transferred to an input of a first shift cell in the second plurality of shift cells; and

a differential operational amplifier having at least two inputs, a first input of the differential operational amplifier being coupled to the terminating output of the first plurality of shift cells and a second input being coupled to a terminating output of the second plurality of shift cells.--

25. (New) --The system of claim 24, further comprising a regeneration amplifier having an input coupled to the terminating output of the first plurality of shift cells and

7 transferring signals from a terminating output of the first plurality of storage locations
8 to an input of a first storage location in a second plurality of storage locations,
9 an output of each storage location in the second plurality of storage locations
10 being coupled to an input of the next storage location in the second plurality
11 of storage locations;
12 determining the difference between signals from the terminating output of the first
13 plurality of storage locations and signals from a terminating output of the
14 second plurality of storage locations.--

1 31. (New) --The method of claim 30, further comprising amplifying the signals
2 transferred from the terminating output of the first plurality of storage locations to the
3 input of the first storage location in the second plurality of storage locations,--

1 32. (New) --The method of claim 31, wherein signals obtained from the terminating
2 output of the first plurality of storage locations represent a key frame of an image
3 captured by the array of analog photocells.--

1 33. (New) --The method of claim 32, wherein determining the difference between
2 signals from the terminating output of the first plurality of storage locations and
3 signals from the terminating output of the second plurality of storage locations
4 produces a delta frame for an image captured by the array of analog photocells.--

1 34. (New) --A system comprising:
2 an array of analog photocells;

3 a plurality of analog holding registers, an output of each analog photocell in the array
 4 of analog photocells being coupled to a corresponding analog holding register;
 5 and
 6 a plurality of differential operational amplifiers, a first input of each differential
 7 operational amplifier being coupled to an analog photocell, a second input of
 8 each differential operational amplifier being coupled to the corresponding
 9 analog holding register for the analog photocell that is coupled to the first
 10 input.--

1 35. (New) --The system of claim 34, wherein an output of each analog holding register in
 2 the plurality of analog holding registers is coupled to an input of the next analog
 3 holding register in the plurality of analog holding registers.--

1 36. (New) --The system of claim 35, further comprising a plurality of analog
 2 multiplexers, a first input of each analog multiplexer being coupled to a differential
 3 operational amplifier in the plurality of differential operational amplifiers, a second
 4 input of each analog multiplexer being coupled to the corresponding analog photocell
 5 coupled to the differential operational amplifier that is coupled to the first input.--

1 37. (New) --The system of claim 36, further comprising a plurality of shift cells, an
 2 output of each shift cell being coupled to an input of the next shift cell in the plurality
 3 of shift cells, an input of each shift cell being coupled to one of the plurality of analog
 4 multiplexers.--

38. (New) --The system of claim 37, wherein a signal from a terminating output of the plurality of shift cells is transferred to a first of the plurality of analog holding registers.--

39. (New) --The system of claim 38, further comprising a regeneration amplifier, an input of the regeneration amplifier being coupled to the terminating output of the plurality of shift cells, an output of the regeneration amplifier being coupled to the input of the first of the analog holding registers.--

40. (New) --The system of claim 39, wherein a select signal sent to each of the plurality of analog multiplexers chooses either the signals from the array of analog photocells or the signals from the plurality of differential operational amplifiers.--

41. (New) --The system of claim 40, wherein the select signal choosing the signals from the array of analog multiplexers results in transmission of key frame data for the array of analog photocells.--

42. (New) --The system of claim 40, wherein the select signal choosing the signal from the plurality of differential operational amplifiers results in transmission of difference frame data for the array of analog photocells.--

43. (New) --A method comprising:
transferring a signal from each analog photocell in an array of analog photocells to a corresponding register in a plurality of registers; and

determining the difference between a signal from each analog photocell in the array of analog photocells and a signal from the corresponding register in the plurality of registers for the analog photocell.--

44. (New) --The method of claim 43, wherein an output of each register in the plurality of registers is coupled to an input of the next register in the plurality of registers.--

45. (New) --The method of claim 44, further comprising choosing a set of signals from between:
signals from the array of analog photocells; or
the difference determined between the signal from each analog photocell in the array of analog photocells and the signal from the corresponding register in the plurality of registers for the analog photocell.--

46. (New) --The method of claim 45, further comprising transferring the chosen set of signals to a plurality of storage locations, an output of each storage location being coupled to an input of the next storage location in the plurality of storage locations.--

47. (New) --The method of claim 46, further comprising transferring a signal from a terminating output of the plurality of storage locations to a first of the plurality of registers.--

48. (New) --The method of claim 47, further comprising amplifying the signal transferred from the terminating output of the plurality of storage locations to the first of the plurality of registers.--

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1 49. (New) --The method of claim 48, further comprising transmitting a select signal to
2 determine the chosen set of signals.--

1 50. (New) --The method of claim 49, wherein, if the select signal chooses the signals
2 from the array of analog photocells, then the choice results in transmission of key
3 frame data for the array of analog photocells.--

1 51. (New) --The method of claim 49, wherein, if the select signal chooses the
2 difference between the signal from each analog photocell in the array of analog
3 photocells and the signal from the corresponding register in the plurality of
4 registers for the analog photocell, then the choice results in transmission of
5 difference frame data for the array of analog photocells.--

REMARK

Applicant respectfully requests reconsideration of this application as amended. All existing claims have been cancelled, and claims 16-51 have been added. Therefore, claims 16-51 are present for examination.

Election of Invention

In the parent application, Serial No. 09/307,574, an election restriction requirement was entered. The present application is a divisional application directed to the claims within Group II, which consisted of claims 6-13. For simplicity in examination, the present amendment cancels the existing claims and replaces such claims with new claims.

Title and Abstract

The title and abstract of the application has been modified to conform to the claims herein. The original title and abstract were present before the required election of subject matter in this application and thus did not reflect the current state of the claims.

Conclusion

Applicant respectfully requests examination of the claims presented herein and submits that the claims are in condition for allowance.

Invitation for a Telephone Interview

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

Request for an Extension of Time

Applicant respectfully petitions for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17(a) for such an extension.

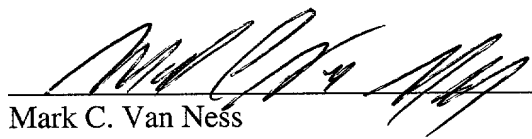
Charge our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: 11/26/01


Mark C. Van Ness
Reg. No. 39,865

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AMENDMENT

Presented below are the amendments, with changes indicated. Insertions are underlined and deletions are bracketed.

In the Title:

Please delete the title in its entirety and insert the following in place thereof:

[New title]

In the Specification:

Page 1, line 4, after the title "BACKGROUND OF THE INVENTION", please insert the following:

[New paragraph]

In the Abstract:

Please delete the abstract in its entirety and insert the following in place thereof:

[New abstract]

In the Claims:

Please amend the claims as follows:

1-15. **Cancel without prejudice**

16-

51. [New claims]